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United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JANUARY, 1913.

NOTE.—The station publications noted in this list are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Wintering Pregnant Ewes in Alabama. By D. T. Gray and L. W. Shook. (Bulletin 167, pp. 207–220, figs. 7.)

Feeding experiments to test the value of sorghum hay, mixed hay, cotton seed, cottonseed meal and cottonseed hulls, and cottonseed meal alone and in conjunction with corn silage for wintering pregnant ewes under Alabama conditions are reported.

Feeding and Managing Dairy Cattle. Feed and Care of the Calf. The Bull. Silos and Silage. By L. W. Summers and L. W. Shook. (Circular 18, pp. 97–128, figs. 11.)

The above subjects are discussed in relation to practical dairying under Alabama conditions.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Southwestern Beans and Teparies. By G. F. Freeman. (Bulletin 68, pp. 567–619, pls. 8, figs. 3.)

A study of the history, botanical characters, and food value, including chemical analyses, of two species of beans of New Mexico, namely, "frijoles" (*Phaseolus vulgaris*) and "teparies" (*P. acutifolius*), is reported, together with directions as to the cultivation, harvesting, and marketing of the crop as based on experiments at the station.

CALIFORNIA STATION, Berkeley, T. F. Hunt, Director.

Walnut Culture in California. Walnut Blight. By R. E. Smith, C. O. Smith, and H. J. Ramsey. (Bulletin 231, pp. 115–398, figs. 96.)

This bulletin describes in detail different species of walnuts and methods of walnut cultivation and propagation under California conditions as based on extensive investigations at the station. A study of the history, causes, injuries, and control of walnut blight or bacteriosis is reported. Other less important diseases, as well as insect enemies of the walnut, are also described with methods of control.

Red Spiders and Mites of Citrus Trees. By H. J. Quayle. (Bulletin 234, pp. 483-530, figs. 35.)

Studies of the injuries, distribution, life history, and habits of the citrus red spider (*Tetranychus mytilaspidis*), the six-spotted mite (*T. sexmaculatus*), and the silver or rust mite (*Eriophyes oleivorus*) are reported with methods of control. Other less important species and a number of natural enemies are also described.

Further Proof of the Cause and Infectiousness of Crown Gall. By C. O. Smith. (Bulletin 235, pp. 531-557, figs. 28.)

Previous investigations on the subject are briefly reviewed, and a series of inoculation experiments with *Bacterium tumefaciens* on different trees to determine the causes and infectiousness of crown gall are reported.

The Common Ground Squirrels of California. By H. C. Bryant. (Circular 82, pp. 4, figs. 2.)

Different species of ground squirrels of California and their distribution are briefly described with methods of control.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Twelfth Report of the State Entomologist, 1912. By W. E. Britton. (Annual Report, 1912, pt. 3, pp. I-IV+209-296+V-VIII, pls. 16, figs. 2.)

This is an account of the activities of this department of the station during the year, including notes on various insects, and results of inspection of nurseries and apiaries and other control work.

DELAWARE STATION, Newark, H. Hayward, Director.

The Relation of Parasitic Fungi to the Contents of the Cells of the Host Plants. II, The Toxicity of Vegetable Acids and the Oxidizing Enzym. By M. T. Cook and J. J. Taubenhaus. (Bulletin 97, pp. 53, pl. 1.)

This is a continuation of Bulletin 91 of the station and reports studies of the toxicity of a number of vegetable acids and oxidizing enzymes of different fruits to various parasitic organisms. Investigations on the subject by others are briefly reviewed.

NOTE.—The number of another bulletin which was noted in the October list as Bulletin 97 has now been changed by the station to Bulletin 98.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Variety Test of Corn and Cotton, 1912. By J. M. Kimbrough. (Circular 68, pp. 3.)

The results of variety tests of corn and cotton during 1912 are tabulated.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Sangamon County Soils. By C. G. Hopkins et al. (Soil Report 4, pp. 40, pls. 3, figs. 4.)

This is a report of a soil survey, including map, of Sangamon County, giving a description of the soil types, estimates from chemical analyses of the plant-food content per acre, and the results of fertilizer and crop rotation tests. An appendix describes the methods of conducting a soil survey and crop and fertilizer rotations for permanent soil improvement under Illinois conditions more fully discussed in Bulletin 123 of the station.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Registered Feeding Stuffs. (Feeding Stuffs Bulletin 23, pp. 17-20.)

Guaranteed analyses of feeds registered during October, 1912, are given with a brief explanation of the requirements of the Kansas feeding stuffs law.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Report of Commercial Feed Stuffs. By J. E. Halligan. (Feed Stuffs Report 1911-12, pp. 122.)

The results of inspection and analyses of samples of feeding stuffs collected by the station during 1912 are reported with explanations.

Report of Analyses of Commercial Fertilizers and Paris Green. By J. E. Halligan. (Fertilizer Report 1911-12, pp. 96.)

The results of inspection and analyses of commercial fertilizers and Paris green in the State for the year 1911-12 are reported.

MAINE STATION, Orono, C. D. Woods, Director.

The Mode of Inheritance of Fecundity in the Domestic Fowl. By R. Pearl. (Bulletin 205, pp. 283-394, figs. 3.)

This bulletin gives a detailed technical account of a series of experiments at the Maine station in the breeding of poultry for egg production. The manner in which the productive ability (fecundity) of hens is inherited is described. References to the literature of the subject are added.

The Histology of the Oviduct of the Domestic Hen. By F. M. Surface. (Bulletin 206, pp. 395-430, pls. 5.)

"This bulletin contains a detailed account of the microscopic anatomy of the oviduct of the domestic fowl." References to the literature of the subject are added.

MASSACHUSETTS STATION, Amherst, F. W. Morse, Acting Director.

Meteorological Observations at the Massachusetts Agricultural Experiment Station. By J. E. Ostrander and H. W. Angier. (Meteorological Bulletin 288, pp. 4.)

This is a summary for December, 1912.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Spray and Practice Outline for Fruit Growers. 1912. By H. J. Eustace and R. H. Pettit. (Special Bulletin 57, pp. 20, figs. 4.)

Directions are given for the preparation and application of different sprays for the control of insects and diseases of orchard and garden fruits under Michigan conditions.

Foul Brood. By R. H. Pettit. (Special Bulletin 58, pp. 12, figs. 5.)

This is a reprint of the more important information contained in Farmers' Bulletin 442 of this department.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Smuts of Nebraska Cereals. By E. M. Wilcox. (Bulletin 131, pp. 3-16, figs. 13.)

This bulletin gives "information regarding the life history and proper methods of control and prevention of the common smuts of Nebraska cereal plants" including barley, wheat, oats, corn, and sorghum.

Beef Production. By H. R. Smith. (Bulletin 132, pp. 52, figs. 7.)

Feeding experiments with steers to test the value of corn silage for summer feeding; the relative value of prairie hay and corn stover in conjunction with alfalfa, and of wheat bran, cottonseed meal, cottonseed cake, and alfalfa in conjunction with prairie hay; the comparative value of silage and stover, and heavy and light rations of corn with silage and alfalfa for calves under Nebraska conditions are reported. A study of the efficiency of individuals of beef and of dairy breeds is also reported.

NEW JERSEY STATIONS, New Brunswick, J. G. Lipman, Director.

The Availability of Nitrogenous Materials as Measured by Ammonification. By J. G. Lipman et al. (Bulletin 246, pp. 3-36.)

Studies of the influence of various fertilizer materials and mixtures, stimulants, and manure on the ammonification of different organic fertilizers are reported.

Experiments on Ammonia Formation in the Presence of Carbohydrates and of Other Nonnitrogenous Organic Matter. By J. G. Lipman et al. (Bulletin 247, pp. 3-22, figs. 3.)

The results of a series of experiments to determine the effect of different kinds of sugar and substances rich in carbohydrates, with and without lime, on ammonification of dried blood are reported.

Experiments Relating to the Possible Influence of Protozoa on Ammonification in the Soil. By J. G. Lipman et al. (Bulletin 248, pp. 3-19.)

Studies of the effect of fresh and pasteurized infusion, and of drying on the ammonification of different organic substances in sterilized and unsterilized soils, with a view of determining the influence of protozoa on the bacterial activity of the soil, are reported.

Conditions Affecting the Availability of Nitrogen Compounds in Vegetation Experiments. By J. G. Lipman et al. (Bulletin 249, pp. 3-23, fig. 1.)

Studies of the availability of different nitrogenous fertilizers as affected by the presence of dextrose, the degree of fineness of the fertilizer, and the mechanical composition of the soil, and the influence of nonmagnesium and magnesium lime on yield of dry matter and nitrogen in alfalfa are reported.

Miscellaneous Vegetation Experiments. By J. G. Lipman et al. (Bulletin 250, pp. 3-19.)

Experiments to determine the effect of the growth of legumes on the composition of the soil, the effect of fertilizers and proportion of sand in the soil on the composition of soy beans and buckwheat, the influence of organic matter on the availability of tricalcic phosphate, the availability of different forms of phosphoric acid, the influence of borates on plant growth and of lime and carbohydrates on the activity of *Azotobacter beyerincki* are reported.

Factors Relating to the Availability of Nitrogenous Plant Foods. By J. G. Lipman et al. (Bulletin 251, pp. 3-55, pls. 7, figs. 2.)

The results of a series of pot experiments to determine the effect of different external and internal factors on the availability of nitrogenous substances are reported in detail.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Sweet-pea Studies, II. Winter-flowering Sweet Peas. By A. C. Beal. (Bulletin 319, pp. 617-656, pls. 5, figs. 8.)

Following tests at the station and descriptions of a number of winter-flowering varieties of sweet peas are reported. Methods of culture under glass and control of insects and diseases are described.

Sweet-pea Studies, III. Culture of the Sweet Pea. By A. C. Beal. (Bulletin 320, pp. 657-713, pls. 11, figs. 10.)

Different species of the genus *Lathyrus* and the history, evolution, and characteristics of the sweet pea are described, together with directions for the garden production, control of insects and diseases, and exhibition of sweet peas as based on studies at the station. Varieties of dwarf sweet peas are also briefly described.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Lime Sulphur not a Good Potato Spray. By F. H. Hall. (Bulletin 352, popular edition, pp. 2.)

This is a popular edition of this bulletin.

Machine Milking Does Not Affect Milk Flow. By F. H. Hall. (Bulletin 353, popular edition, pp. 11, fig. 1.)

This is a popular edition of this bulletin.

Report of Analyses of Samples of Fertilizers Collected by the Commissioner of Agriculture During 1912. (Bulletin 354, pp. 363-482.)

Analyses of samples collected during 1912 are reported with brief explanations regarding valuation.

The Apple and Cherry Ermine Moths. By P. J. Parrott and W. J. Schoene. (Technical Bulletin 24, pp. 3-40, pls. 9, figs. 11.)

Studies of the life history, habits, injuries, and natural enemies of *Yponomeuta malinellus* and *Y. padellus* are reported in detail. Methods of control are briefly described. An extended bibliography is added.

The Organic Phosphoric Acid of Cottonseed Meal. By R. J. Anderson. (Technical Bulletin 25, pp. 3-12.)

The isolation of an unidentified phosphoric acid from cottonseed meal and studies of its properties are reported. Preliminary tests of the toxicity of the acid on rabbits are included.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Food Bulletin 2 (1912), No. 7, pp. 113-128.)

Analyses of food products and benzoinated lard are reported with a list of beverages registered, suggestions for the preserving of food for display, the improvement of flour in storage, and notes on different proprietary compounds.

Special Bulletin Food Department. (Special Food Bulletin, 2 (1912), No. 8, pp. 129-144.)

The results of examination of samples of diluted acetic and hydrochloric acids, aromatic sulphuric acid, sirup of ferrous iodid, sirup of hydriodic acid, solution of potassium hydroxid and lead acetate, and analyses of food products and beverages on sale in the State are reported, together with notes on miscellaneous compounds.

OHIO STATION, Wooster, C. E. Thorne, Director.

Effect of Fertilizers on the Physical and Chemical Properties of Wheat. By J. W. Ames, G. E. Boltz, and J. A. Stenius. (Bulletin 243, pp. 567-587, figs. 11.)

The results of plat experiments to determine the effect of different fertilizers, singly and in combination, on the physical characteristics and chemical composition of wheat are reported.

Sweet Clover. By W. A. Lloyd. (Circular 129, pp. 14, figs. 7.)

This is a summary of information on the value of sweet clover in the improvement of worn-out lands as based on extensive investigations and field observations by the Ohio station reported in detail in Bulletin 244.

OKLAHOMA STATION, Stillwater, J. A. Wilson, Director.

Twenty-first Annual Report, 1912. (Annual Report, 1912, pp. 47, figs. 5.)

This contains a financial statement and reports by the director and by the heads of the different departments reviewing the year's work of the station.

PENNSYLVANIA STATION, State College, R. L. Watts, Director.

Feeding Draft Horses. By W. A. Cochel. (Bulletin 117, pp. 3-19, figs. 17.)

Feeding experiments to determine the comparative value of rations of (1) corn, oats, and mixed hay; (2) corn, cottonseed meal, and mixed hay; and (3) corn, cottonseed meal, silage, and mixed hay for fattening draft horses are reported.

Strain Tests of Cabbage. By C. E. Myers. (Bulletin 119, pp. 15, figs. 3.)

This is a continuation of Bulletin 96 and reports the results of tests of viability, trueness to type, earliness of maturity, and yields of a large number of different strains of cabbage under Pennsylvania conditions.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Analyses of Commercial Fertilizers. By R. N. Brackett et al. (Bulletin 171, pp. 3-68.)

Analyses of samples of fertilizers inspected by the station during 1912 are reported with explanations of terms.

Twenty-fifth Annual Report, 1912. (Annual Report, 1912, pp. 45.)

This contains a financial statement and reports of the director and heads of departments reviewing the year's work of the station.

VERMONT STATION, Burlington, J. L. Hills, Director.

Hemlock in Vermont. Comparative Study of Log Rules. By A. F. Hawes. (Bulletin 161, pp. 3-32, pls. 4, fig. 1.)

A study of the distribution, condition, yield, and methods of management of hemlock forests in Vermont is reported. A comparative study of log rules is also reported.

Mendelian Inheritance in the Carnation. By W. Stuart. (Bulletin 163, pp. 51-72, pls. 8.)

Studies of the inheritance of Mendelian characters in crosses of single and double carnations are reported. The literature of the subject is briefly reviewed.

Commercial Feeding Stuffs. Condimental Feeds. By J. L. Hills et al. (Bulletin 164, pp. 75-134, fig. 1.)

The results of inspection and analyses of commercial feeding stuffs and condimental feeds are reported and discussed.

The Peat and Muck Deposits of Vermont. By J. L. Hills and F. M. Hollister. (Bulletin 165, pp. 139-240, pls. 8, figs. 3.)

The results of a survey and analyses showing the fertilizer and fuel values of peat and muck deposits in Vermont are reported in detail.

VIRGINIA STATION, Blacksburg, S. W. Fletcher. Director.

Treatment of Bovine Tuberculosis. By N. S. Mayo and W. Kerr. (Bulletin 199, pp. 23, figs. 7.)

This is a record of attempts to rid the college herd of tuberculosis, including repeated tuberculin tests of the herd and the isolation of tubercular individuals as recommended by the Bang system. The cause, symptoms, and spread of the disease are described with methods of treatment.

Chemical Studies of Virginia Soils. By W. B. Ellett and H. H. Hill. (Bulletin 200, pp. 24, figs. 2.)

Chemical analyses of, and pot and field tests with different fertilizer mixtures on the more important soil types of Virginia to determine their fertilizer needs are reported.

WASHINGTON STATION, Pullman, R. W. Thatcher. Director.

A Report Covering the Work of the Western Washington Experiment Station from November 1, 1907, to April 1, 1911. By W. H. Lawrence. (Bulletin 7, Special Series, pp. 124, figs. 38.)

The history and organization of the station and its activities in the various departments from November 1, 1907, to April 1, 1911, are reviewed.

WISCONSIN STATION, Madison, H. L. Russell. Director.

Getting the Most Profit from Farm Manure. By E. B. Hart. (Bulletin 221, pp. 34, figs. 10.)

Data showing the annual loss of manure on Wisconsin farms and the value of manure from different animals and feeds are reported, with directions for the preservation and application of manure under Wisconsin conditions.

WYOMING STATION, Laramie, H. G. Knight, Director.

A Comparison of Cotswold and Southdown Grade Lambs. Fattening Rations for Aged Ewes. By A. D. Faville. (Bulletin 95, pp. 15, figs. 4.)

Part 1 of this bulletin reports comparative tests of the value of Southdown and Cotswold feeder lambs under Wyoming conditions. Part 2 reports comparative tests of alfalfa, native, and mixed oat and pea-vine hay in conjunction with corn chop for fattening ewes.

Ration Experiments with Swine. By A. D. Faville. (Bulletin 96, pp. 19.)

Feeding experiments to determine the value of rape as compared with pea pasture, and alfalfa meal as compared with middlings as a corn supplement for fattening pigs; and rape as compared with pea pasture, and the value of alfalfa hay for brood sows are reported.

Twenty-second Annual Report, 1912. (Annual Report, 1912, pp. 78, figs. 2.)

This contains the director's report and reports of the heads of the different departments reviewing the year's work of the station, a financial statement, meteorological data for the year, and a special paper on Zygadenine, the crystalline alkaloid of *Zygadenus intermedius*.

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LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING FEBRUARY, 1913.

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ARIZONA STATION, Tucson, R. H. Forbes, Director.

Improved Types of Sheep for the Southwest. By F. W. Wilson.
The Sheep of Tunis and Algeria. By A. E. Vinson. (Bulletin 69,
pp. 615–654, pls. 7, figs. 3.)

Experiments in the breeding of an improved type of sheep adapted to Arizona conditions from crosses of the native types of the State with Tunis sheep, and also with the representative Down breeds are reported. The history and characteristics of the sheep of Tunis and Algeria are described.

CALIFORNIA STATION, Berkeley, T. F. Hunt, Director.

Mushrooms and Toadstools. By W. A. Setchell. (Circular 84,
pp. 4.)

This circular explains briefly the more important characteristic differences between edible and poisonous toadstools. A short bibliography is added.

A Preliminary Report of a Nematode Observed on Citrus Roots and
Its Possible Relation with the Mottled Appearance of Citrus Trees.
By E. E. Thomas. (Circular 85, pp. 14, figs. 8.)

Preliminary studies of the distribution and character of a nematode, the nature of its injuries on the roots of citrus trees in a number of counties in the southern California citrus district, and its possible relation to a diseased (mottled) condition of the trees are reported.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Wood-using Industries of Connecticut. By A. H. Pierson. (Bulletin 174, pp. 96.)

Studies of the relation between wood-using industries and forests of Connecticut, including the properties, uses, and cost of, and demand by commercial industries for various kinds of wood, are reported in detail. An appendix gives a list of woods and their uses by species and of the names and addresses of wood-using manufacturers of the State classed under different industries.

The Cost of Agricultural Lime in Connecticut. By E. H. Jenkins and J. P. Street. (Bulletin 175, pp. 3-8.)

Analyses and valuations of samples of limestone, limekiln ashes, and oyster-shell lime, together with addresses of firms handling these products, are reported and briefly discussed.

Commercial Feeding Stuffs, 1912. By J. P. Street. (Annual Report, 1912, pt. 4, pp. 297-340.)

Analyses and valuations of samples of commercial feeding stuffs collected by the station during 1912 are reported. A compilation of data as to cost, average composition, digestibility, and manurial value of feeds is included.

FLORIDA STATION, Gainesville. P. H. Rolfs, Director.

Melanose and Stem-end Rot (*Phomopsis citri*). By B. F. Floyd and H. E. Stevens. (Bulletin 111, pp. 16, figs. 9.)

Studies of the distribution, nature, and injuries of melanose and stem-end rot of citrus fruits are reported with methods of control.

Tomato Insects, Root Knot, and "White Mold." By J. R. Watson. (Bulletin 112, pp. 17-39, figs. 14.)

The life history, habits, injuries, and methods of control of the bollworm (*Heliothis obsoleta*), root knot (*Heterodera radiculicola*), thrips (*Euthrips tritici*), cutworms, hornworms (*Phlegthontius quinquemaculata* and *P. scita*), white mold (*Eriophyes calacladophora*), aphids (*Mcgoura solani*), flea beetles, and other miscellaneous insects of the tomato are described.

INDIANA STATION, Lafayette, A. Goss, Director.

Fattening Western Lambs, 1910-11 and 1911-12. By J. H. Skinner and F. G. King. (Bulletin 162, pp. 673-710, fig. 1.)

Feeding experiments to determine the value of (1) timothy hay versus clover, (2) corn silage as a roughage, (3) the effect of increased amounts of silage in a ration, and (4) cottonseed meal as a supplement to rations for fattening lambs under Indiana conditions are reported.

Winter Steer Feeding, 1911-12. By J. H. Skinner and F. G. King. (Bulletin 163, popular edition, pp. 12, fig. 1.)

This is a popular edition of this bulletin.

Industrial Clubs and Contests. (Circular 38, pp. 24, figs. 5.)

The purposes and methods of organization, including blank records for contestants, of industrial clubs for boys and girls are described.

Twenty-fifth Annual Report, 1912. (Annual Report, 1912, pp. 90.)

This contains reports by the director and the heads of the different departments reviewing the year's work of the station, and a financial statement.

IOWA STATION, Ames. C. F. Curtiss, Director.

The Pear Slug (*Caliroa cerasi* [*Eriocampoides limacina*]). By R. L. Webster. (Bulletin 130, popular edition, pp. 8, figs. 5.)

This is a popular edition of this bulletin.

Bacteria at Different Depths in Some Typical Iowa Soils. By P. E. Brown. (Research Bulletin 8, pp. 279-321, figs. 9.)

Investigations on the subject by others are briefly reviewed and determinations of the total number of bacteria in samples of different types of loess and of drift soils of Iowa at different depths and under various cropping systems are reported and discussed in relation to aeration and the moisture, nitrogen, and humus contents of the soil.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Investigations on Methods of Analysis of Cane Products. By W. E. Cross. (Bulletin 135, pp. 83, figs. 3.)

A series of investigations on methods of analysis of sugarhouse products is reported.

Carrion Feeders as Disseminators of Anthrax or Charbon. By H. Morris and W. H. Dalrymple. (Bulletin 136, pp. 16, figs. 6.)

Experiments to determine the method of infection and dissemination of anthrax by different carrion feeders with a view of emphasizing a more strict enforcement of the regulation with regard to destruction of anthrax carcasses are reported.

The Rots of the Cotton Boll. By C. W. Edgerton. (Bulletin 137, pp. 3-113, pls. 13.)

Previous investigations on the subject by others are briefly reviewed, and studies of the cultural characteristics and methods of infection of a number of fungi of the boll rots of cotton are reported in detail. Methods of control are briefly described. A bibliography of the literature on the subject is added.

The Bean Blight and Preservation and Treatment of Bean Seed. By C. W. Edgerton and C. C. Moreland. (Bulletin 139, pp. 43, pls. 6.)

Studies of the characteristics and injuries of bean blight are reported with methods of control. Bean anthracnose and Rhizoctonia rot, together with methods of control, are also described and general directions are given for the preservation and treatment of bean seed for the control of these diseases.

MASSACHUSETTS STATION, Amherst, F. W. Morse, Acting Director.

Inspection of Commercial Fertilizers. By H. D. Haskins et al. (Bulletin 143, pp. 93.)

The principal requirements of the State fertilizer law are briefly stated, a list of names of manufacturers and brands of fertilizers is given, and analyses of samples of fertilizers and lime compounds collected by the station during 1912 are reported, with explanations.

Meteorological Observations. By J. E. Ostrander and H. W. Angier. (Meteorological Bulletin 289, pp. 4.)

This is a summary for January, 1913.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

Farm Poultry House Construction. By H. L. Kempster and F. B. Mumford. (Bulletin 107, pp. 57-90, figs. 35.)

Different types of poultry houses in use at the Missouri station and adapted to Missouri conditions are described.

Keeping Records of Dairy Cows. By C. H. Eckles. (Circular 57, pp. 177-184, figs. 6.)

Brief directions are given for keeping milk and butter fat and herd-book records of dairy cows on the farm.

NEW JERSEY STATIONS. New Brunswick, J. G. Lipman, Director.

The Associative Growth of Legumes and Nonlegumes. By J. G. Lipman. (Bulletin 253, pp. 3-48, pls. 9.)

Experiments begun by the author in 1908 which showed the benefit to non-legumes by growth with legumes are reported.

Analyses and Valuations of Commercial Fertilizers and Ground Bone. By C. S. Cathcart et al. (Bulletin 254, pp. 3-51.)

This bulletin gives the balance of the analyses of fertilizers inspected in 1912 not reported in Bulletin 252, together with a discussion of the whole inspection work of the year.

Cow-testing Associations. By A. S. Cook. (Circular 16, pp. 3-16.)

The organization and work of cow-testing associations in different States are briefly described, with suggestions as to how to organize such associations. A copy of a constitution and by-laws is added.

NEW MEXICO STATION, State College, L. Foster, Director.

Composition of Some New Mexico Waters, With a Discussion of Their Fitness for Irrigation and Domestic Purposes. By R. F. Hare and S. R. Mitchell. (Bulletin 83, pp. 76.)

This is a continuation of Bulletins 12 and 34, and reports and discusses analyses of a large number of New Mexico waters examined by the chemist during the past 10 years.

Wheat Growing Under Irrigation. By E. P. Humbert. (Bulletin 84, pp. 16, fig. 1.)

Different types of wheat and their development are described, together with directions as to the cultivation, time of seeding, rotation, harvesting, and control of smut under irrigation in New Mexico as based on experiments at the station.

Grape Crown Gall Investigations. By F. Garcia and J. W. Rigney. (Bulletin 85, pp. 28, figs. 4.)

Tests of the resistance to crown gall of a number of varieties of grapes are reported, together with a description of the different varieties. A description of the disease as reported in Bulletin 183 of the Bureau of Plant Industry of this department is included.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Grape Stocks for American Grapes. By U. P. Hedrick. (Bulletin 355, pp. 483-515, pls. 5, fig. 1.)

Experiments in the grafting of different varieties of American grapes on selected or vigorous rootstocks are reported and discussed.

New York Grapes on New Roots. By F. H. Hall. (Bulletin 355, popular edition, pp. 11, fig. 1.)

This is a popular edition of this bulletin.

Director's Report for 1912. By W. H. Jordan. (Bulletin 356, pp. 517-563.)

This contains a financial statement and the director's report reviewing the year's work of the station.

OHIO STATION, Wooster, C. E. Thorne, Director.

Sweet Clover. A Field Survey of Its Distribution, Soil Adaptation, Habits, and Agricultural Value. By W. A. Lloyd. (Bulletin 244, pp. 589-684, figs. 36.)

The results of a study of the distribution, habits, soil adaptation, and value as feed, pasture, and soil improver of sweet clover under Ohio conditions are reported in detail. The distribution of this plant in other States and countries is also discussed. A bibliography is added.

Rations for Fattening Range Lambs. By B. E. Carmichael and J. W. Hammond. (Bulletin 245, pp. 685-722, figs. 4.)

This is a continuation of Bulletins 179 and 187, and reports four seasons' experiments with lambs to determine the comparative value of heavy and light grain rations and of various roughages when fed with corn and with corn and oil meal combined.

Some Ohio Birds. By H. A. Gossard and S. G. Harry. (Bulletin 250, pp. 78, pl. 1, figs. 19.)

This bulletin describes the more important birds of economic importance in Ohio and the character of the food eaten by them. The bulletin is based on extensive observations in different parts of the State. A bibliography is added.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Ticks and How to Destroy Them. By M. R. Powers. (Circular 6, pp. 18, figs. 5.)

This is a compilation of information on methods of tick eradication applicable to farm conditions in South Carolina, with a view of stimulating the organized county tick-eradication work.

Some Results of the Boys' Corn Club Work in South Carolina. By C. B. Haddon. (Circular 7, pp. 28, figs. 4.)

The purpose and results of boys' corn clubs and the experiences of superintendents and members of such organizations are briefly described.

Home Mixing and General Fertilizer Formulas. By W. B. West. (Circular 8, pp. 8.)

Different fertilizer formulas are given and briefly discussed.

Lime for South Carolina Soils. By T. E. Keitt. (Circular 9, pp. 7.)

Analyses of oyster-shell lime, ground limestone, and other lime compounds are reported, and the forms and application of lime for South Carolina soils are briefly discussed.

Home Mixing of Fertilizers. By J. C. Rampley. (Circular 10, pp. 3-31.)

Directions for mixing and formulas of different fertilizer compounds are given and briefly discussed.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Fertility Experiments in a Rotation of Cowpeas and Wheat. Part II. The Effect of Liming on the Crop Production. By C. A. Mooers. Part III, The Effect of Liming and of Green Manuring on the Soil Content of Nitrogen and Humus. By C. A. Mooers, H. H. Hampton, and W. K. Hunter. (Bulletin 96, pp. 13-43, figs. 3.)

This is a continuation of Bulletin 90 and reports experiments to determine the profitableness of liming for cowpeas and wheat, with and without phosphatic fertilizers, and the effect of liming alone and in conjunction with green manuring on the nitrogen and humus contents of the soil.

Twenty-third Annual Report, 1910. (Annual Report, 1910, pp. 91-122, figs. 10.)

This contains reports by the director and the heads of the different departments reviewing the year's work of the station, and a financial statement.

UTAH STATION, Logan, E. D. Ball, Director.

Labor Saving Devices for the Farm Home. By Leah D. Widtsoe. (Circular 7. pp. [VIII] + 39-76, figs. 13.)

The advantages and disadvantages of farm life from the standpoint of the farmer and the farmer's wife are pointed out, and a number of labor-saving devices, including cost data, for the farm home are described and illustrated with a discussion of their practical application.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Twenty-second Annual Report, 1912. (Bulletin 109, pp. 24.)

This contains the director's report, reviewing the year's work of the station, and a financial statement.

Commercial Fertilizers. By E. Fulmer. (Bulletin 110, pp. 52.)

This bulletin discusses the more important principles underlying the use of fertilizers, and reports analyses of samples of fertilizers for 1911 and 1912. The text of the State fertilizer law and a summary of its principal requirements are given.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The Wisconsin Nursery and Orchard Inspection Service, 1910-1912. By J. G. Sanders. (Bulletin 227, pp. 38, figs. 13.)

This bulletin gives an account of the nursery inspection work in the State during 1910-1912, together with a list of names and addresses of licensed nurserymen and dealers, and brief descriptions of the more important nursery insects and diseases and their control. Copies of the State nursery and orchard inspection law and of the insecticide and fungicide law are appended.

Report of the Director, 1912. By H. L. Russell. (Bulletin 228, pp. 91, figs. 38.)

This contains the report of the director reviewing the year's work in the different departments of the station, digests of the station's publications issued during the year, and a financial statement.

The Manufacture of Cheddar Cheese from Pasteurized Milk. By J. L. Sammis and A. T. Bruhn. (Research Bulletin 27, pp. 137-248, figs. 17.)

This bulletin reports comparative studies of different methods of cheese making and describes in detail a process of manufacturing Cheddar cheese by pasteurization and acidulation, together with numerous tests of the old and new methods. Investigations on this subject by others are reviewed.



United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MARCH, 1913.

NOTE.—The station publications noted in this list are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Report of Work Done During 1911 Under the Local Experiment Law.
By J. F. Duggar et al. (Circular 19, pp. 133–154.)

This contains brief reports by the director and the heads of the departments reviewing the local experimental work of the station during 1911, and a financial statement.

Report of Work Done During 1912 Under the Local Experiment Law.
By J. F. Duggar et al. (Circular 20, pp. 3–40.)

This contains reports by the director and the heads of departments reviewing the local experimental work of the station during 1912, and a financial statement.

Twenty-fifth Annual Report, 1912. (Annual Report, 1912, pp. 45.)

This contains a financial statement and reports by the director and the heads of the different departments reviewing the year's work of the station.

CALIFORNIA STATION, Berkeley, T. F. Hunt, Director.

Olives in California. By F. T. Bioletti. (Circular 86, pp. 4.)
Culture, varieties, and pickling of olives are briefly discussed.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Pig Feeding. By J. M. Scott. (Bulletin 113, pp. 41–59, fig. 1.)

Feeding experiments to determine the value of different rations for fattening pigs under Florida conditions are reported. The composition of the animal body and of feeds, and methods of calculating rations and of swine management, are briefly discussed.

HAWAII FEDERAL STATION, Honolulu, E. V. Wilcox, Special Agent in Charge.

The Extraction and Use of Kukui Oil. By E. V. Wilcox and Alice R. Thompson. (Press Bulletin 39, pp. 8.)

The occurrence of kukui in Hawaii and the possibilities for that island of the commercial production of kukui oil are pointed out, and studies of the chemical composition of the oil, with a view of furnishing a basis for its commercial production, are reported.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Comparison of Methods of Sampling Cream for Testing. By C. E. Lee and N. W. Hepburn. (Bulletin 153, abstract, pp. 3.)

This is a condensed outline of this bulletin.

The Corn Root-aphis in Illinois. By S. A. Forbes. (Circular, 1913, Jan. 9, pp. 7.)

The life history, habits, and injuries of the insect, together with measures of control under Illinois conditions, are briefly described.

INDIANA STATION, Lafayette, A. Goss, Director.

Strawberries. By J. Oskamp. (Bulletin 164, popular edition, pp. 3-8, figs. 18.)

This is a popular edition of this bulletin.

IOWA STATION, Ames, C. F. Curtiss, Director.

The Germination Test of Seed Corn. By H. D. Hughes. (Bulletin 135, pp. 307-379, figs. 22.)

The results of tests of the efficiency of a number of seed-corn testers, the effect of different factors on the accuracy of germination tests, and the relation of different kernel characteristics to stand and yield of the crop are reported in detail.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

An Experimental Study of Heat Transmission and Entrainment in a Vacuum Evaporator. By E. W. Kerr and A. J. Isacks. (Bulletin 138, pp. 72, pl. 1, figs. 15.)

The present status of knowledge regarding evaporation in vacuum evaporators and experiments to determine the effect of different factors on the transmission of heat in vacuum evaporation are reported in detail.

MASSACHUSETTS STATION, Amherst, F. W. Morse, Acting Director.

Meteorological Observations at the Massachusetts Agricultural Experiment Station. By J. E. Ostrander and H. W. Angier. (Meteorological Bulletin 290, pp. 4.)

This is a summary for February, 1913.

MISSOURI FRUIT STATION, Mountain Grove, P. Evans, Director.

Common Orchard Troubles, Spray Mixtures, and Spray Calendar. By F. W. Faurot. (Bulletin 23, pp. 3-39, figs. 28.)

The more important insects and fungus diseases of orchard trees and fruits in Missouri, together with methods of preparation and application of sprays for their control, are described.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Experiments with Pigs. By R. W. Clark. (Bulletin 89, pp. 16.)

Feeding experiments with pigs to determine the value of frosted and unfrosted grains in conjunction with various concentrates and forage, and the cost of keeping sows under Montana conditions are reported.

The Internal Use of Carbolic Acid for the Prevention of Contagious Abortion in Cattle, with Some Notes on the Relation of Granular Vaginitis to Abortion. By W. J. Taylor. (Bulletin 90, pp. 17-31, figs. 5.)

The results of two years' experimental work with three herds of cows to determine the value of carbolic acid, given in the feed and by hypodermic injection, for the prevention of contagious abortion are reported. The relation of granular vaginitis to abortion, as observed in these experiments, is discussed.

Winter Injury to Fruit Buds of the Apple and the Pear. By O. B. Whipple. (Bulletin 91, pp. 33-45, figs. 20.)

The general characteristics of winter injury of buds and the later development of injured buds are described, as based on observations at the Montana station.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

A Dry Rot of the Irish Potato Tuber. By E. M. Wilcox, G. K. K. Link, and Venus W. Pool. (Research Bulletin 1, pp. 3-88; pls. 28, figs. 23.)

This bulletin reviews investigations on the subject by others and reports detailed studies of the morphological and physiological characteristics of the causal organism of dry rot of the potato, together with tests of the resistance of varieties and methods of treatment of storage tubers for its control.

NEVADA STATION, Reno, G. H. True, Director.

Annual Report, 1912. (Annual Report, 1912, pp. 48.)

This contains a financial statement and reports by the director and the heads of departments, reviewing the year's work of the station.

NEW JERSEY STATIONS, New Brunswick, J. G. Lipman, Director.

Fertilizer Registrations. By C. S. Cathcart. (Bulletin 255, pp. 3-37.)

The names and addresses of firms having fertilizers for sale in the State in 1913 are given, together with the names and guaranteed analyses of the brands.

Annual Report, 1911. (Annual Report, 1911, pp. XXII+582, pls. 60, figs. 22.)

This contains a financial statement, a brief summary of the year's work by the director, and detailed accounts of the work in the departments of chemistry, animal husbandry, horticulture, poultry husbandry, soil chemistry and bacteriology, biology, botany, and entomology. A report on mosquito work for 1911 is also included.

NEW MEXICO STATION, State College, L. Foster, Director.

Twenty-third Annual Report, 1912. (Annual Report, 1912, pp. 37.)

This contains the director's report, reviewing the year's work in the different departments of the station and a financial statement.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Larch Case-bearer. By G. W. Herrick. (Bulletin 322, pp. 39-54, figs. 11.)

The life history, habits, and injuries of the larch case-bearer (*Colcophora laricella*) are described with methods of control of the pest on trees used for ornamental purposes. Previous investigations by others are briefly reviewed. A bibliography is given.

A Study of Feeding Standards for Milk Production. By E. S. Savage. (Bulletin 323, pp. 59-123.)

The history and development of the Haecker and of Armsby's feeding standards for dairy cows are reviewed, and comparative studies of the value of these standards as based on feeding experiments with a number of cows at the Cornell station are reported in detail.

Cherry Fruit Flies and How to Control Them. By J. F. Illingworth. (Bulletin 325, pp. 191-204, pls. 9.)

The life history, habits, and injuries of the cherry fruit fly (*Rhagoletis fausta*) are described, and experiments to determine the value of poisoned baits for its control are reported. A bibliography is added.

Water-soluble Matter in Soils Sterilized and Reinoculated. By T. L. Lyon and J. A. Bizzell. (Bulletin 326, pp. 207-224, figs. 4.)

Investigations on the subject by others are briefly reviewed, and preliminary studies of the relation of bacterial activity to the chemical changes and the removal of toxic substances in steam-heated soils are reported.

Twenty-fifth Annual Report, 1912. (Annual Report, 1912, pp. CCVII+738, pls. 43, figs. 203.)

This contains reports by the director and heads of the different departments reviewing the year's work of the station, a financial statement, and reprints of Bulletins 304-320 and of Circular 12.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

An Experiment on the Control of Currant Cane Necrosis by Summer Pruning. By F. C. Stewart. (Bulletin 357, pp. 10.)

Six season's experiments to determine the value of spring and summer pruning for the control of necrosis of currants under New York conditions are reported.

Pruning Fails to Control a Currant Disease. By F. H. Hall. (Bulletin 357, popular edition, folio, fig. 1.)

This is a popular edition of this bulletin.

Studies in Plant Nutrition, I. By W. H. Jordan. (Bulletin 358, pp. 11-30.)

Studies of the feeding capacity of different species of agricultural plants, the influence of fineness upon the availability of ground phosphatic rock, and the fertilizing value of an iron-ore waste are reported.

The Grape Leaf Hopper. By F. Z. Hartzell. (Bulletin 359, pp. 31-51, pls. 6, figs. 2.)

This is a continuation of Bulletins 331 and 344 and reports studies of the hibernating habits and spring food plants of the grape leaf hopper, together with spraying experiments in different orchards of the State for its control.

NORTH CAROLINA STATIONS, West Raleigh, B. W. Kilgore, Director.

Thirty-fifth Annual Report, 1912. (Annual Report, 1912, pp. 373, figs. 107.)

This contains reports by the director and heads of the different departments reviewing the year's work of the station; a financial statement; special papers on economic value of corn suckers, economic importance of corn silage in southern beef production, notes on three limb diseases of apple, rusts of blackberries, dewberries, and raspberries, infection of apple leaves by cedar rust, nitrifying and ammonifying powers of North Carolina soils, miscellaneous nitrification experiments, report of work on corn billbug (*Sphenophorus callosus*), biological record of little grass billbug (*S. parvulus*), studies in cottonseed meal intoxication, and feeding and toxicity of cottonseed meal; reprints of Press Bulletin 24, Technical Bulletin 8, and Bulletins 217 to 223, inclusive.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Organizing Cow-testing Associations and Cooperative Creameries.
By G. L. Martin and J. H. Shepperd. (Bulletin 102, pp. 26, figs. 6.)

Information is given relative to methods of organization, including copies of a constitution and by-laws of cooperative creameries and cow-testing associations along lines which have proven successful in other districts.

Special Bulletin Food Department. (Special Food Bulletin, 2 (1912), No. 11, pp. 165-180.)

The results of analyses of food products, paints, patent medicines, and miscellaneous compounds, and of inspection of meat markets are reported. Definitions of the more common feeding stuffs are also given.

Third Annual Report of the Williston Subexperiment Station for the Year 1910. By E. G. Schollander. (Annual Report Williston Substation, 1910, pp. 70, figs. 10.)

This contains an account of additions to equipment and buildings, and a review of the work of the Williston substation during 1910.

Fourth Annual Report of the Williston Subexperiment Station for the Year 1911. By E. G. Schollander. (Annual Report Williston Substation, 1911, pp. 64, pl. 1, figs. 6.)

This contains an account of additions to buildings and equipment, and a review of the work of the substation during 1911.

OHIO STATION, Wooster, C. E. Thorne, Director.

Barnyard Manure: Production, Composition, Conservation, Reenforcement, and Value. By J. W. Ames and E. W. Gaither. (Bulletin 246, pp. 725-753.)

This supplements Bulletin 187 and reports studies of the composition and amount of manure from different animals, the value of earth versus cement floors in producing manure, and the decomposition and methods of preservation and application of manure under Ohio conditions.

Early Cabbage. By W. J. and S. N. Green. (Bulletin 252, pp. 89-102, figs. 8.)

Tests of a number of strains of early cabbage are reported and briefly discussed. Notes on miscellaneous strains are also given.

Tree Planting on Public School Grounds. By E. Secrest. (Circular 130, pp. 15-17.)

The policy of the station in assisting teachers and woodlot owners in the management of trees and woodlots is briefly outlined.

OREGON STATION, Corvallis, J. Withycombe, Director.

Biennial Crop Pest and Horticultural Report, 1911-12. By C. I. Lewis et al. (Biennial Crop Pest and Horticultural Report, 1911-12, pp. 317, pls. 5, figs. 142.)

This report contains special papers on a prune survey of Oregon, frost investigation work of 1912, seedless and malformed fruits, greenhouse tomato investigations, the drying of prunes, the loganberry in Oregon, variety adaptability, and bud variation in relation to fruit markings. There are also detailed reports on insects and plant diseases observed during the year.

PENNSYLVANIA STATION, State College, R. L. Watts, Director.

Poultry Experiments. By H. W. Jackson and W. A. Cochel. (Bulletin 120, pp. 24.)

Tests of the effect of warming, washing, age, and handling on the hatchability of eggs, and feeding experiments to test the effect of varying proportions of fiber, and of simple rations as compared with variety in rations for laying hens are reported.

RHODE ISLAND STATION, Kingston, B. L. Hartwell, Director.

Cooperative Experiments in Alfalfa Culture. By H. J. Wheeler et al. (Bulletin 152, pp. 3-86 + II, pls. 6.)

Experiments on a number of farms in different parts of the State to determine the value of soil inoculation and of various fertilizer mixtures and materials in the production of alfalfa under Rhode Island conditions are reported.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Preparation of Concentrated Lime-sulphur Solution on the Farm. By G. C. Starcher. (Bulletin 201, pp. 16, figs. 6.)

Tests of different methods of preparing concentrated lime-sulphur solution as found in use on different farms in the State are reported and discussed.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Penetration System of Orchard Spraying. By A. L. Melander and R. K. Beattie. (Bulletin 106, pp. 40, figs. 15.)

Spraying apparatus and methods of spraying for the destruction of insects which are more or less difficult to reach are described as based on experiments at the station. A bibliography is given.

The Preventing of the Stinking Smut of Wheat. By H. B. Humphrey. (Popular Bulletin 48, pp. 3.)

Methods of prevention, as based on work at the station, are briefly described.

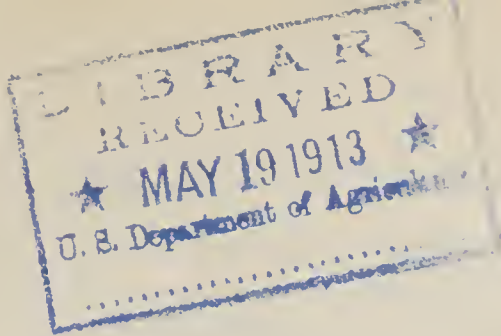
Experiments in Fertilizing Alfalfa. By R. W. Thatcher and G. A. Olson. (Popular Bulletin 49, pp. 4.)

The use of fertilizers for alfalfa, as determined by one season's experiments, on the basaltic loam soils of the State is briefly discussed.

Potato Growing. By O. M. Morris. (Bulletin 9, Special Series, pp. 3-8.)

Brief directions are given for the growing of potatoes under Washington conditions as based on experiments at the station.





United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING APRIL, 1913.

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CALIFORNIA STATION, Berkeley, T. F. Hunt, Director.

The Economic Value of the Western Meadowlark in California. By H. C. Bryant. (Bulletin 236, pp. 16, figs. 7.)

The investigations reported in this bulletin "included field investigation, experimentation, and a study of the food habits of the bird for the whole year by an examination of the stomach-contents of birds collected for the purpose each month of the year and in over twenty-five different localities in the State."

Potato Growing Clubs. (Circular 83, pp. 4.)

Directions are given for the organization and management of such clubs and for the culture of potatoes.

Alfalfa. By W. T. Clarke. (Circular 87, pp. 6.)

This circular discusses briefly the requirements and methods of culture of alfalfa.

Advantages to the Breeder in Testing his Purebred Cows for the Register of Merit. By Cora J. Hill. (Circular 88, folio.)

These advantages are briefly discussed.

Hog Cholera and Its Prevention. By C. M. Haring. (Circular 89, pp. 4.)

Brief notes on the disease and directions for its prevention are given.

Tuberculosis in Cattle and Hogs. By C. M. Haring. (Circular 90, pp. 4.)

Methods of recognizing and dealing with this disease are briefly described.

Disinfection on the Farm. By C. M. Haring. (Circular 91, pp. 3.)

Brief directions are given.

Infectious Abortion and Sterility in Cows. By C. M. Haring. (Circular 92, pp. 4.)

Cause, prevention, and remedies are discussed.

Bean Growing Contest. By F. L. Griffin. (Circular 93, pp. 8.)

General directions for growing beans are given and the organization of boys' and girls' club contests for this purpose is explained.

The Dairyman's Relation to Quality. By L. M. Davis. (Circular 94, folio.)

This circular emphasizes quality as an essential in permanent success in dairying.

Detecting Dairy Losses. By L. M. Davis. (Circular 95, folio.)

The importance of the use of milk scales and the Babcock test in detecting dairy losses is emphasized.

Pork Production. By J. I. Thompson. (Circular 96, folio.)

This circular points out the importance of increased pork production in California and makes suggestions regarding improvement in this line.

Increasing Dairy Profits. By H. E. Van Norman. (Circular 97, folio.)

The importance of eliminating unprofitable cows and improving methods of feeding is pointed out.

Plowing and Cultivating Soils in California. By C. B. Lipman. (Circular 98, pp. 4.)

The importance of deep and thorough tillage is explained and methods of securing such tillage are briefly described.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Cotton Culture. By J. M. Kimbrough. (Bulletin 100, pp. 229-248, fig. 1.)

Tests of varieties and fertilizers are reported.

IDAHO STATION, Moscow, W. L. Carlyle, Director.

The Composition of Irrigated and Nonirrigated Fruits. By J. S. Jones and C. W. Colver. (Bulletin 75, pp. 53.)

This bulletin reports and discusses analyses of apricots, cherries, nectarines, peaches, plums, prunes, apples, pears, blackberries, currants, blueberries, gooseberries, grapes, loganberries, raspberries, and strawberries grown on irrigated and unirrigated soil.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Fate of Tubercle Bacilli Outside the Animal Body. By C. F. Briscoe. (Bulletin 161, pp. 279-375, figs. 4.)

This is a companion to Bulletin 149 of the Illinois station dealing with tuberculosis of farm animals, and gives the results of detailed studies of the duration of life of tubercle bacilli, mainly of the bovine type, in direct sunlight, shade, cow manure, garden soil, running water, and market butter. It also contains an extensive review and bibliography of the literature of the subject.

Fate of Tubercle Bacilli Outside the Animal Body. By C. F. Briscoe. (Bulletin 161, abstract, pp. 3-8, figs. 4.)

This is an abstract of this bulletin.

Tuberculosis in the University Dairy Herd. By C. C. Hayden. (Bulletin 162, pp. 377-407, figs. 18.)

An account is given in this bulletin of the efforts which have been made to eradicate tuberculosis from the dairy herd of the university, the methods and results of the treatment used being given in detail. The text of a proposed bill for State aid in eradication of the disease is included.

KENTUCKY STATION, Lexington, J. H. Kastle, Director.

The Woody Plants of Kentucky. By H. Garman. (Bulletin 169, pp. 3-62, pls. 10, figs. 8.)

This is a descriptive list of the woody plants of Kentucky preliminary to a more complete account.

MAINE STATION, Orono, C. D. Woods, Director.

Spruce Bud Worm and Spruce Leaf Miners. By O. A. Johannsen. (Bulletin 210, pp. II + 13-36, pls. 3, figs. 3.)

This bulletin deals with the history, distribution, habits, description, natural control, and treatment of the spruce bud moth (*Tortrix fumiferana*). It also contains a bibliography of the literature relating to this insect and brief notes on two spruce leaf miners (*Recurvaria piceella* and *Epinotia piceafoliana*).

Potato Flea Beetle. By O. A. Johannsen. (Bulletin 211, pp. 37-56, pl. 1, figs. 4.)

This bulletin deals with the history, distribution, habits, description, host plants, and control of the potato flea beetle (*Epitrix cucumeris*). It also contains a bibliography of the subject and a list of insects observed on the potato.

Orchard Spraying Experiments in 1912. By W. J. Morse and G. A. Yeaton. (Bulletin 212, pp. 57-72.)

This bulletin reports the results of experiments during 1912 at the station farm at Highmoor with lime-sulphur, Bordeaux mixture, and lead arsenate, as well as with a combination of the lead arsenate with lime-sulphur.

Official Inspections. (Official Inspections 44, pp. 165-180.)

This deals with creamery inspection with reference to sanitation, and an investigation of the weight of butter sold by various creameries and dairies in the State.

Official Inspections. (Official Inspections 45, pp. 181-192.)

This deals with an investigation of the character and composition of carbonated beverages, ice cream, and cream used for ice-cream making within the State.

Official Inspections. (Official Inspections 46, pp. 12.)

The results of seed inspection under the State law in 1912 are reported with brief notes on the requirements of the seed inspection law, the difficulty of obtaining guaranteed seeds from outside of the State, and testing seeds at home.

Official Inspections. (Official Inspections 47, pp. 13-20.)

The results of inspection of insecticides, particularly arsenical poisons, but also of miscellaneous insecticides and fungicides, are reported.

Proper Growing and Handling of Potato "Seed" Stock. By C. D. Woods and W. J. Morse. (Document 435, pp. 15.)

This is a paper which was presented at the annual convention of the American Seed Trade Association at Marblehead, Mass., June 21, 1911.

The Potato Flea Beetle. (Document 467, pp. 7, figs. 5.)

This is an abstract of Bulletin 211 of the Maine station.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Lime-sulphur As a Summer Spray. By J. B. S. Norton and T. B. Symons. (Bulletin 164, pp. 263-272.)

This bulletin points out the necessity of summer spraying of peach and apple trees, reports the results of cooperative work in spraying, and gives brief notes on some of the worst diseases and insect enemies of peaches and apples with recommendations for their control.

Boys' Corn-growing Contest in 1911: Suggestions for Corn Growing and Conducting a Contest. By N. Schmitz and W. E. Hanger. (Bulletin 165, pp. 273-284.)

This bulletin reports the results of boys' corn-growing contests conducted in 1911 under the supervision of the Maryland Station in Anne Arundel, Baltimore, Harford, and Frederick Counties. It also contains suggestions regarding the culture of corn and methods of conducting the contests.

How Lime is Distributed Through and Lost from Soils: Factors Influencing the Diffusion and Depletion of Lime in Soils. By L. B. Broughton. (Bulletin 166, pp. 285-326, figs. 2.)

In the investigations reported in this bulletin an attempt was made to determine the rates at which different forms of lime applied to the soil were removed in the drainage water and circulated in the soil, and also the amounts of lime removed from the soil by crops, as well as the effect of carbon dioxide on the solubility and rate of movement of the lime.

Changes in Potatoes During Storage. By C. O. Appleman. (Bulletin 167, pp. 327-334.)

This is a progress report on investigations on the nature and control of the processes of "after ripening" of potatoes. It deals with the relation of temperature to starch and sugar transformations, respiration, loss in weight, and effects of sprouting.

Cow-testing Associations. By G. H. Hibberd and G. E. Wolcott. (Bulletin 169, pp. 29-72, figs. 7.)

The advantages of such associations are briefly discussed, associations which have been organized in Maryland are described, and detailed herd records which have been supplied to the station by these associations and by individuals are given.

The Maryland Seed Law. By C. P. Smith. (Bulletin 170, pp. 73-79.)

The text of the State seed law approved April 11, 1912, the regulations formulated under the law, and some of the general results and advantages of seed inspection are given.

Poultry Notes. By R. H. Waite. (Bulletin 171, pp. 81-104, figs. 26.)

This is a series of illustrations with brief explanatory notes relating to a variety of poultry structures, appliances, and practices based in part upon observations and experiments at the station.

Irish Potato Investigations from 1909 to 1913. By T. H. White. (Bulletin 172, pp. 105-120, figs. 4.)

This bulletin reports comparative tests of seed grown in Maine and at two places in Maryland, different methods of holding over seed for late planting, and yields of early and late planted varieties. The bulletin also contains brief directions for the culture of potatoes in Maryland and for controlling diseases and insect enemies.

Tomato Variations Induced by Culture. By T. H. White. (Bulletin 173, pp. 121-133, figs. 5.)

Experiments on the effect of pruning, fertilizing, and temperature on variations in the tomato are reported.

MASSACHUSETTS STATION, Amherst, F. W. Morse, Acting Director.

Meteorological Observations at the Massachusetts Agricultural Experiment Station. By J. E. Ostrander and H. W. Angier. (Meteorological Bulletin 291, pp. 4.)

This is a summary for March, 1913.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Seed Analyses for 1911 and 1912. By E. A. Bessey. (Bulletin 270, pp. 71-98.)

The text of the State law regulating the sale of agricultural seeds and fruit trees is given, and the results of inspection under this law are reported in detail.

Alfalfa Growing in Michigan. By V. M. Shoesmith. (Bulletin 271, pp. 99-136, figs. 9.)

This bulletin is based mainly upon replies to a circular of inquiry sent to a large number of farmers in Michigan for the purpose of securing information as to the success of alfalfa growing in the State and the methods that are giving the best results.

Infectious Abortion and Sterility in Cattle. By W. Giltner. (Technical Bulletin 14, pp. 3-12.)

Experiments in which the Bang organism was injected intravenously and subcutaneously without injury to either pregnant or nonpregnant cattle, and tests of abortin as a diagnostic in connection with agglutination and complement fixation tests are reported. References to the more important investigations on the subject are given.

The Influence of Certain Acid-destroying Yeasts upon Lactic Bacteria. By Zae Northrup. (Technical Bulletin 15, pp. 3-35, figs. 5.)

Investigations of the action of certain acid-reducing yeasts in retaining or restoring the vitality and activity of lactic bacteria, either alone or in association with other organisms, are reported in detail. A short bibliography of the subject is also given.

The Bacterial Activity in Soil as a Function of Grain-size and Moisture Content. By O. Rahn. (Technical Bulletin 16, pp. 3-41, fig. 1.)

Studies of ammonia formation by *Bacillus mycoides* in different kinds of soil, sand, and soil extracts and solutions; of the mechanism of ammonia production; and of the behavior and requirements of aerobic and anaerobic bacteria are reported in this bulletin.

MINNESOTA STATION, University Farm, St. Paul, A. F. Woods, Director.

Minnesota Weeds, I. By W. L. Oswald and A. Boss. (Bulletin 129, pp. 82, figs. 49.)

This bulletin gives descriptions and methods of identification and eradication of 24 of the more important Minnesota weeds.

MISSISSIPPI STATION, Agricultural College, E. R. Lloyd, Director.

Cotton Experiments, 1912. (Bulletin 161, pp. 3-29.)

This bulletin reports progress in experiments with varieties, fertilizers, and methods of culture which have been in progress for several years at the central station and at the substations at McNeill, Holly Springs, and Delta.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Care of Milk and Cream on the Farm. By J. H. Frandsen. (Bulletin 133, pp. 3-12, figs. 6.)

The importance of cleanliness in handling milk and cream is emphasized, and simple farm methods and appliances for this purpose are described.

A Dry Rot of the Irish Potato Tuber. By E. M. Wilcox and G. K. K. Link. (Bulletin 134, pp. 3-8, pls. 3, fig. 1.)

This bulletin discusses the history and distribution, economic importance, symptoms, cause, and methods of control of a new form of dry rot of the potato tuber observed in specimens received from western Nebraska in the winter of 1907-8 and for which the name *Fusarium tuberivorum* is proposed.

NEVADA STATION, Reno, G. H. True, Director.

Annual Report, 1911. (Annual Report, 1911, p. 48.)

This contains a financial statement and brief reports by the director and the heads of the different departments of the station.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Studies in Plant Nutrition, II. By W. H. Jordan. (Bulletin 360, pp. 53-77, figs. 8.)

An account is given of experiments with barley, peas, tomatoes, tobacco, buckwheat, rape, and turnips conducted in a forcing house during 1900-1904 to ascertain the essential minimum amount of phosphoric acid and potash which must be available to plants to produce the maximum growth.

Apples: Old and New. By U. P. Hedrick and G. H. Howe. (Bulletin 361, pp. 79-135.)

"The New York station attempts to test every variety of fruit obtainable that will thrive in this climate. This bulletin is one of several publications from this station giving results of tests of old and new apples. It is the latest answer to the oft-repeated question: 'What apples shall I plant?'"

Seed Tests Made at the Station During 1912. By M. T. Munn. (Bulletin 362, pp. 137-163.)

This bulletin gives the text of the State seed-inspection law, the method employed in its enforcement, results of inspection, and of some studies on the relationship between weight and count standards of purity, and comments on the results of the inspection and the bearing of the law on agricultural interests. Results of examinations of a large number of samples of seed received from correspondents are also reported.

Composition and Properties of Some Casein and Paracasein Compounds and Their Relation to Cheese. By L. L. Van Slyke and A. W. Bosworth. (Technical Bulletin 26, pp. 3-32.)

This bulletin reports a continuation of studies of the casein compounds of cheese, and deals particularly with compounds formed by casein and paracasein with bases such as calcium, strontium, barium, ammonium, sodium, and potassium. It also contains an account of a study of the composition of the substance formed in cheese which is insoluble in water but soluble in 5 per cent solution of sodium chlorid.

OHIO STATION, Wooster, C. E. Thorne, Director.

Nitrogen and Mineral Constituents of the Alfalfa Plant. By J. W. Ames and G. E. Boltz. (Bulletin 247, pp. 755-773.)

"This bulletin presents data secured from a study of the [nitrogen and] mineral elements of the alfalfa plant grown on soil under conditions which have produced marked variations in the yield and composition of the crop."

Spraying Machinery Accessories. By W. H. Goodwin. (Bulletin 248, pp. 775-804, figs. 12.)

This bulletin describes some of the more important improvements in spraying machinery accessories during recent years.

Second Annual Report of the Miami County Experiment Farm. By C. McIntire. (Bulletin 256, pp. 233-254, fig. 1.)

This is one of a series of bulletins on county experiment farms giving detailed information regarding work on these farms and in similar lines at the central station at Wooster. This bulletin also contains short special articles on The Family Apple Orchard, by W. J. Green; and Some Animal Parasites of the Miami County Hog, by D. C. Mote.

Oats. By C. G. Williams and F. A. Welton. (Bulletin 257, pp. 255-283, fig. 1.)

This bulletin summarizes results of 20 years' experiments at Wooster with varieties, fertilizers, methods of seeding, imported versus home-grown seed, and reports studies of the protein content of oats. It also gives results of variety tests of barley, emmer, spring rye, and spring wheat.

Second Annual Report of Paulding County Experiment Farm. By C. McIntire. (Bulletin 258, pp. 285-298.)

This is one of a series of bulletins on county experiment farms, giving detailed information regarding work on these farms and in similar lines at the central station at Wooster.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Soil and Crop and Their Relation to State-building. By A. N. Hume. (Bulletin 139, pp. 3-16.)

This is an argument in favor of a State-wide study of soil and crop conditions in South Dakota.

Selection of Seed Potatoes in South Dakota. By A. N. Hume and M. Champlin. (Bulletin 140, pp. 18-32, figs. 2.)

Tests during 1912 of large seed pieces from large tubers and of small pieces from small tubers are reported.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Liming for Tennessee Soils. By C. A. Mooers. (Bulletin 97, pp. 35, figs. 7.)

The results of several years' tests on the typical soils of Tennessee of the effect of lime on different farm crops are reported.

The San José Scale in Tennessee with Methods for Its Control. By G. M. Bentley. (Bulletin 98, pp. 37-59, figs. 22.)

Observations on the San José scale as it occurs in Tennessee and on methods of control which have given the best results are reported in this bulletin.

UTAH STATION, Logan, E. D. Ball, Director.

The Soil of the Southern Utah Experiment Station. By J. A. Widtsoe and R. Stewart. (Bulletin 121, pp. 243-268, fig. 1.)

Physical and chemical analyses of the gypsiferous soil of the substation farm near St. George are reported and its management is discussed.

The Nature of the Dry Farm Soils of Utah. By J. A. Widtsoe and R. Stewart. (Bulletin 122, pp. 271-288.)

The origin and physical properties, and particularly the chemical composition of the soils of the dry farms of Juab, San Juan, Sevier, Iron, Tooele, and Washington Counties are discussed.

Varieties of Fruit Recommended for Planting in Utah. By L. D. Batchelor. (Circular 8, pp. 77-80.)

A list of varieties of apples, pears, peaches, cherries, plums, and prunes prepared after a canvass of the State with the cooperation of the county horticultural inspectors is recommended.

Pruning the Apple Orchard. By L. D. Batchelor. (Circular 9, pp. 81-104, figs. 24.)

The principles and effects of pruning are discussed, and methods which have given the best results in Utah are described.

The Control of the Alfalfa Weevil. By E. G. Titus. (Circular 10, pp. 105-120, figs. 15.)

This circular gives a brief account of the alfalfa weevil, its present distribution, and the principal methods that appear to be of value in its control.

VERMONT STATION, Burlington, J. L. Hills, Director.

Twenty-fifth Annual Report, 1912. Annual Report, 1912, pp. XX+610, pls. 36, figs. 18.)

This includes a financial statement, a summary account of the work of the year by the director, Bulletins 161-167 of the station, and special articles on Microorganisms Occurring in Maple Sap and Their Influence on the Color, Flavor, and Chemical Composition of Sirup, by H. A. Edson; Discussion of Physical and Chemical Data Secured on Maple Sirups Obtained from Saps Inoculated with Microorganisms, by C. H. Jones; and Technical Description of Certain Bacteria Occurring in Maple Sap, by H. A. Edson and C. W. Carpenter.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Experiments with Field Peas and Soy Beans. By P. J. White. (Popular Bulletin 50, pp. 4.)

The more important practical results of cultural experiments with field peas carried on for four years in cooperation with the Bureau of Plant Industry of this department are summarized and brief reference is made to tests of soy beans at Pullman, Wash., during three years.

Commercial Arsenates of Lead and Lime-sulphur. By R. W. Thatcher. (Popular Bulletin 51, pp. 4.)

Analyses of a number of samples of lead arsenate and lime-sulphur solution collected in the open market are reported and discussed.

Spraying Calendar for 1913. By A. L. Melander and H. B. Humphrey. (Popular Bulletin 52, folio.)

This calendar is intended particularly for the treatment of the more common insects and diseases of apples, pears, peaches, plums, cherries, and other fruits in Washington.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Avian Tuberculosis. By E. G. Hastings and J. G. Halpin. (Research Bulletin 28, pp. 249-271, pls. 7.)

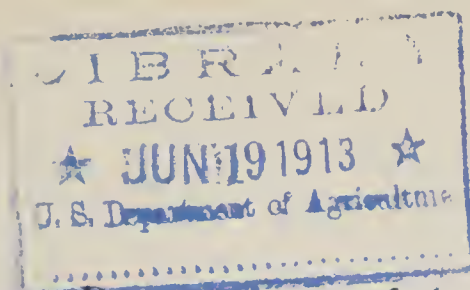
This bulletin reports the results of investigations on the occurrence, economic importance, characteristics, mode of infection, spread, and transmission to other animals of avian tuberculosis. The relation of avian and human tubercle bacilli was also studied in its bearing upon hygiene.

WYOMING STATION, Laramie, H. G. Knight, Director.

The Identification of the Woody Aster. By A. Nelson and H. G. Knight. (Bulletin 97, pp. 4, pls. 2, fig. 1.)

A brief description, with reproductions of photographs and a mounted specimen of the plant, is given.





United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MAY, 1913.

NOTE.—The station publications noted in this list are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Fattening Hogs in Alabama. By D. T. Gray, L. W. Summers, and L. W. Shook. (Bulletin 168, pp. 221–284, figs. 14.)

Accounts are given of experiments with (1) peanut pastures as compared with dry feeds; (2) fattening hogs during the winter months on rape, rye, and oat pastures as against dry feeds; (3) fattening hogs during the summer and fall months on cowpea, soy bean, and velvet bean pastures as against dry feeds; and (4) fattening hogs in dry lots on corn, shorts, and skim milk.

Local Fertilizer Experiments with Cotton in South Alabama in 1912.

By J. F. Duggar, J. T. Williamson, and L. J. Hawley. (Bulletin 169, pp. 3–42.)

This bulletin reports the results of fertilizer experiments conducted by the Alabama station in the counties of the southern half of Alabama in 1912.

Local Fertilizer Experiments with Cotton in North Alabama in 1912.

By J. F. Duggar, J. T. Williamson, and L. J. Hawley. (Bulletin 170, pp. 45–74.)

This bulletin reports the results of fertilizer experiments with cotton conducted by the Alabama station in the counties of the northern half of Alabama in 1912.

Black Spot of Roses. By F. A. Wolf. (Bulletin 172, pp. 113–118, pls. 2, figs. 3.)

A concise account is given of the work of various investigators, including investigations by the author, on the nature and methods of control of black spot of roses (*Diplocarpon rosæ*).

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Twenty-third Annual Report, 1912. (Annual Report, 1912, pp. VI + 654–723, pl. 1, figs. 4.)

This contains administrative and financial reports and brief accounts of work in the different departments of the station during the fiscal year ended June 30, 1912.

COLORADO STATION, Fort Collins, C. P. Gillette, Director.

Thirty-third and Thirty-fourth Annual Reports of the State Board of Agriculture, 1911 and 1912. (Annual Reports, 1911 and 1912, pp. 133.)

This contains the usual financial, executive, and departmental reports reviewing the work of the experiment station during the years 1911 (pp. 1–18, 33–52, 63–67) and 1912 (pp. 73–85, 94–108, 119–127), combined with the annual report of the State agricultural college.

CONNECTICUT STORRS STATION, Storrs, E. H. Jenkins, Director.

Bacillary White Diarrhea of Young Chicks. By L. F. Rettger, W. F. Kirkpatrick, and F. H. Stoneburn. (Bulletin 74, pp. 153-185, pls. 2, figs. 9.)

The purpose of this bulletin is to present some of the more important results of investigation of this disease during the past two years, supplementing Bulletins 60 and 68 of the station.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Annual Report, 1912. (Annual Report, 1912, pp. CXXIX+XI, figs. 13.)

This contains a brief statement by the director, reports by the auditor and heads of the departments of the station, and an index of the report and of regular Bulletins 107 to 110 and Press Bulletins 172 to 182.

HAWAII FEDERAL STATION, Honolulu, E. V. Wilcox, Special Agent in Charge.

Silos, Silage, and Silage Crops for Hawaii. By C. K. McClelland. (Press Bulletin 40, pp. 28, figs. 4.)

The construction of silos, the preparation of silage, and the selection of silage crops adapted to Hawaii are discussed.

Tin Cans Versus Pots for Seedling Plants. By E. V. Wilcox. (Press Bulletin 41, pp. 8, figs. 2.)

The advantages of tin cans over porous pots for seedling plants are explained.

Annual Report, 1912. (Annual Report, 1912, pp. 91, pls. 5, figs. 2.)

This contains a summary of investigations of the station by the director and reports by the heads of the different departments of the station. Accounts are also given of work at the three substations.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Twenty-fifth Annual Report, 1912. (Annual Report, 1912, pp. 23.)

This includes brief financial and administrative statements, with a complete list of the publications of the station.

KENTUCKY STATION, Lexington, J. H. Kastle, Director.

Commercial Feeding Stuffs. By J. D. Turner and H. D. Spears. (Bulletin 170, pp. 65-161.)

This is a report of inspection under the State law, with various explanatory notes.

Feeding Dairy Cows in Kentucky. Experiments in Feeding Dairy Cows and Calves. By J. J. Hooper. (Bulletin 171, pp. 165-190, figs. 4.)

This bulletin contains a general discussion of the feeding of dairy cows, and reports experiments with various rations and methods of feeding calves and in the summer feeding of cows.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Preliminary Report on Winter Cauliflower. By G. L. Tiebout. (Bulletin 140, pp. 19, figs. 2.)

The methods used by the station in the successful production of winter cauliflower for the Chicago and New York markets are briefly described.

MAINE STATION, Orono, C. D. Woods, Director.

Insect Notes for 1912. By O. A. Johannsen. (Bulletin 207, pp. II + 431-466, pls. 3, figs. 9.)

"This bulletin contains notes of some of the more important insects of the year 1912, among them common scale insects, fruit and shade tree pests, wireworms in corn, and parasitic four-winged flies."

Finances, Meteorology, Index. (Bulletin 208, pp. 467-474 + XII.)

This bulletin contains the meteorological observations, financial statement, the index to the bulletins issued in 1912, and the introduction to the annual report of the station, including a list of publications.

New Mineral Fertilizer. By C. D. Woods. (Bulletin 209, pp. 12.)

This bulletin reports an experiment in which corn and potatoes were grown without fertilizer, with ordinary commercial fertilizer, with and without addition of manure, and with so-called new mineral fertilizer, which is stated to be ground rock.

MARYLAND STATION, College Park, H. J. Patterson, Director.

By-product Feeds. By H. J. Patterson and H. J. White. (Bulletin 168, pp. 27.)

This bulletin reports studies of the digestibility of flax by-product, the effect of molasses on the digestibility of this by-product, the digestibility of ground grain screenings, buckwheat middlings, rye distillers' grains and oat hulls, botanical and mechanical analyses of grain screenings, composition of common wheat seeds, mechanical analysis of flax by-products, vitality of seeds in grain screenings, maintenance rations of oat hulls, and quantity of live grains in oat hulls.

Hog Cholera. By B. M. Bolton. (Bulletin 174, pp. 135-169, figs. 6.)

This bulletin deals with the history, nature, and control of hog cholera, especially by means of protective inoculation with serum, the preparation, testing, and administering of which are described in detail. The work of other States on hog cholera is briefly reviewed, and the text of the Maryland law, establishing a State laboratory for the protection and testing of hog-cholera serum and other similar products, which went into effect July 1, 1912, is given.

Miscellaneous Insect Pests. By T. B. Symons and E. N. Cory. (Bulletin 175, pp. 171-180.)

Notes are given on a number of insect pests which appeared in injurious numbers in the State during 1912.

MASSACHUSETTS STATION, Amherst, F. W. Morse, Acting Director.

Meteorological Observations at the Massachusetts Agricultural Experiment Station. By J. E. Ostrander and H. W. Angier. (Meteorological Bulletin 292, pp. 4.)

This is a summary for April, 1913.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

What Is the Antigen Responsible for the Antibodies in Dorset-Niles Serum? By W. Giltner. (Technical Bulletin 13, pp. 3-16.)

This subject was studied by means of hyperimmunization experiments with pigs, "using an antigen composed of *Bacillus cholerae suis* only or the filterable virus only."

Small Fruit Culture. By F. A. Wilkin. (Special Bulletin 59, pp. 3-16.)

This is a popular bulletin on the subject.

Celery Culture in Michigan. By C. P. Halligan. (Special Bulletin 60, pp. 24, figs. 15.)

Methods of culture and marketing are described.

Spray and Practice Outline for Fruit Growers, 1913. By H. J. Eustace and R. H. Pettit. (Special Bulletin 61, pp. 23, figs. 9.)

Directions for preparing and applying sprays for diseases and insect pests of orchard fruits and potatoes are given.

Cucumbers As a Cash Crop. By W. Postiff. (Circular 19, pp. 135-138.)

Brief directions are given for the culture of cucumbers.

Starting a Lawn. By C. P. Halligan. (Circular 20, pp. 139-142, fig. 1.)

Brief directions are given for this purpose.

MINNESOTA STATION, University Farm, St. Paul, A. F. Woods,
Director.

Minnesota Wheat Investigations. I, Milling, Baking, and Chemical Tests, Crop of 1911. By C. H. Bailey. (Bulletin 131, pp. 42, figs. 7.)

This is a report of a systematic study of the composition and milling and bread-making qualities of the common types of wheat grown in various parts of Minnesota.

MISSISSIPPI STATION, Agricultural College, E. R. Lloyd, Director.

Form and Structure of Certain Plant Hybrids in Comparison with the Form and Structure of Their Parents. By H. B. Brown. (Technical Bulletin 3, pp. 3-54, figs. 16.)

An account is here given of investigations in which special attention was given to microscopical structure of the hybrids studied and to inheritance of histological characters. "An effort was also made to determine whether or not there is a definite relation existing between external and internal characters, or a correlation in the inheritance of the two sets of characters."

A short bibliography of the subject is given.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Growing Crops in Western Nebraska. By W. P. Snyder and W. W. Burr. (Bulletin 135, pp. 41, figs. 7.)

The results of experiments at the substation at North Platte in growing grain and forage crops and with rotations and tillage methods are summarized.

Alfalfa Inoculation Tests. By C. W. Pugsley. (Bulletin 136, pp. 8, figs. 3.)

Comparative tests of cultures prepared by this department, soil from well established alfalfa fields, and farm manure as a means of increasing the yield of alfalfa on 12 farms in the State are briefly reported.

The Inheritance of Quantitative Characters in Maize. By R. A. Emerson and E. M. East. (Research Bulletin 2, pp. 3-120, figs. 21.)

This bulletin contains a somewhat complete discussion of the inheritance of quantitative variations in maize, supported by data from experiments conducted independently by the authors.

NEVADA STATION, Reno, G. H. True, Director.

Report of the Department of Food and Drugs Control for the Period Ending December 31, 1912. (Rpt. Dept. Food and Drugs Control, 1912, pp. 46, pls. 2.)

This report gives the results of inspection under the State law with various explanatory notes.

First Annual Report of the Department of Weights and Measures for the Year Ending December 31, 1912. (Ann. Rpt. Dept. Weights and Measures, 1912, pp. 20, pl. 1.)

An account is here given of the first year's work under the State law which was approved March 8, 1911, and which designates the director of the State experiment station as ex officio sealer of weights and measures.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Methods of Chick Feeding. By Clara Nixon. (Bulletin 327, pp. 229-273, figs. 22.)

An account is given of tests of seven different methods of feeding in continuation of experiments reported in Bulletin 182 of the station. The bulletin also discusses incubation, brooding, and marketing of chicks, and contains a review of experiments in chick feeding at the station.

Legume Inoculation. By M. J. Prucha. (Circular 15, pp. 25-32, figs. 5.)

This circular explains the principles and describes methods of inoculation of leguminous plants.

The Improved New York State Gasoline-heated Colony House Brooding System. By C. A. Rogers. (Circular 16, pp. 33-52, figs. 20.)

An account is here given of a modification of the colony brooder house and its equipment described in Bulletin 246 of the station.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Controlling Grape Leaf-hoppers in 1912. By F. H. Hall. (Bulletin 359, popular edition, pp. 4, pls. 2, fig. 1.)

This is a popular edition of this bulletin.

The Best Apples for New York State. By F. H. Hall. (Bulletin 361, popular edition, pp. 12, fig. 1.)

This is a popular edition of the bulletin of the station on Apples: Old and New, by U. P. Hedrick and G. W. Howe.

Does the Farmer Get Pure Seeds? By F. H. Hall. (Bulletin 362, popular edition, pp. 10, fig. 1.)

This is a popular edition of the bulletin of the station on seed tests made at the station in 1912, by M. T. Munn.

A Study of the Udder Flora of Cows. By H. A. Harding and J. K. Wilson. (Technical Bulletin 27, pp. 3-40.)

The results of examinations of 1,230 samples of milk direct from the udders of 78 cows are reported and discussed.

Zinc Arsenite As an Insecticide. By W. J. Schoene. (Technical Bulletin 28, pp. 3-16, fig. 1.)

"This is a report of a series of experiments with zinc arsenite and lead arsenate to determine their relative toxicity to insects and the safeness of zinc arsenite for use on foliage."

An Efficient Electrical Incubator. By H. J. Conn and H. A. Harding. (Technical Bulletin 29, pp. 3-16, figs. 6.)

The construction at the station of incubators insulated with cork board, heated by electricity, and cooled by drip water from a refrigerator is described.

The Pear Psylla. By P. J. Parrott and H. E. Hodgkiss. (Circular 20, pp. 8, pls. 2, figs. 7.)

The character, injury, and control of this insect are briefly discussed.

The False Tarnished Plant Bug on Pears. By P. J. Parrott and H. E. Hodgkiss. (Circular 21, pp. 4, pl. 1, figs. 6.)

The character, injury, and control of this insect are briefly discussed.

The Setting and Dropping of Fruits. (Circular 22, pp. 12.)

This circular discusses briefly the conditions affecting the formation and development of fruit buds with special reference to prevention of the dropping of fruit.

The Control of Plant Lice on Apple Trees. By H. E. Hodgkiss and B. B. Fulton. (Circular 23, pp. 7, pls. 4, figs. 6.)

Concise directions are given for this purpose.

Orchard Management. By U. P. Hedrick. (Circular 24, pp. 12.)

Methods generally applicable in fruit growing are briefly discussed.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Fifth Annual Report of the Williston Subexperiment Station for the Year 1912. E. G. Schollander. (Annual Report Williston Subexperiment Station, 1912, pp. 68, figs. 7.)

Brief accounts are given of the various lines of work at this substation.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Wheat Leaf Miner. By J. S. Houser. (Bulletin 251, pp. 79-86, figs. 7.)

Notes on the life history and injury of the wheat leaf miner (*Agromyza parvicornis*), based in part upon observations by the author, are given.

Plans and Summary Tables of the Experiments at the Central Farm, Wooster, and the Northeastern Test Farm, Strongsville, on the Maintenance of Soil Fertility Arranged for Reference in the Field. Circular 131, pp. 17-40, figs. 6.)

This is the usual annual statement bringing the data for the experiments up to the end of 1912 and summarizing the results for 19 years, 1894 to 1912.

Disease Susceptibility of Apple Varieties in Ohio. By A. D. Selby. (Circular 133, pp. 53-56.)

This circular discusses briefly the differences in susceptibility to disease of the principal varieties of apples grown in the State.

OKLAHOMA STATION, Stillwater, J. A. Wilson, Director.

The Cotton or Melon Aphis. By C. E. Sanborn. (Bulletin 98, pp. 3-20, figs. 4.)

The principal facts regarding the life history, injuries, and control of *Aphis gossypii*, based on eight years' work by the author, are briefly presented in this bulletin.

RHODE ISLAND STATION, Kingston, B. L. Hartwell, Director.

The Effect of Sodium Manuring on the Composition of Plants. By B. L. Hartwell and P. H. Wessels. (Bulletin 153, pp. 89-118.)

This bulletin summarizes the results of field experiments carried on at the station since 1894.

The Percentage of Total Phosphorus in Flat Turnips as Influenced by the Amount Available in Soils. By B. L. Hartwell. (Bulletin 154, pp. 121-148.)

This bulletin is based upon the results of field and pot experiments which have been carried on at the station since 1894.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Cooperative Tests of Alfalfa from Siberia and European Russia. By N. E. Hansen. (Bulletin 141, pp. 35-157, figs. 21.)

This is a report of progress in cooperative tests of some of the many varieties of alfalfa found growing wild by the author in Siberia.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Suggestions on Preparation and Use of Spray Formulas. By G. M. Bentley. (Bulletin 99, pp. 61-82, figs. 8.)

This bulletin gives general information on the control of insects, fungi, and other pests, and consists of a compilation of suggestions on the preparation and use of various insecticides and fungicides.

VERMONT STATION, Burlington, J. L. Hills, Director.

Microorganisms of Maple Sap. (Bulletin 167, pp. 323-606, pls. 16, figs. 14.)

This bulletin includes technical reports on (1) Microorganisms Occurring in Maple Sap and their Influence on the Color, Flavor, and Chemical Composition of Sirup, by H. A. Edson; (2) Discussion of Physical and Chemical Data Secured on Maple Sirups Obtained from Saps Inoculated with Microorganisms, by C. H. Jones; and (3) Technical Description of Certain Bacteria Occurring in Maple Sap, by H. A. Edson and C. W. Carpenter. The work, of which this is a report, was done in cooperation with the Bureau of Plant Industry of this department.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The Marketing of Wisconsin Cheese. By H. C. Taylor, W. A. Schoenfeld, and G. S. Wehrwein. (Bulletin 231, pp. 46, figs. 23.)

A report is here given of a thorough statistical study undertaken for the Wisconsin State Board of Public Affairs for the purpose of securing accurate information regarding the processes of marketing Wisconsin cheese as a basis for legislation.

Chemical Analyses of Licensed Commercial Feeding Stuffs, 1912. By F. W. Woll. (Circular of Information 42, pp. 110.)

This is the usual report of inspection.

Commercial Feeding Stuffs and Fertilizers Licensed for Sale in Wisconsin, 1913. By F. W. Woll. (Circular of Information 43, pp. 14.)

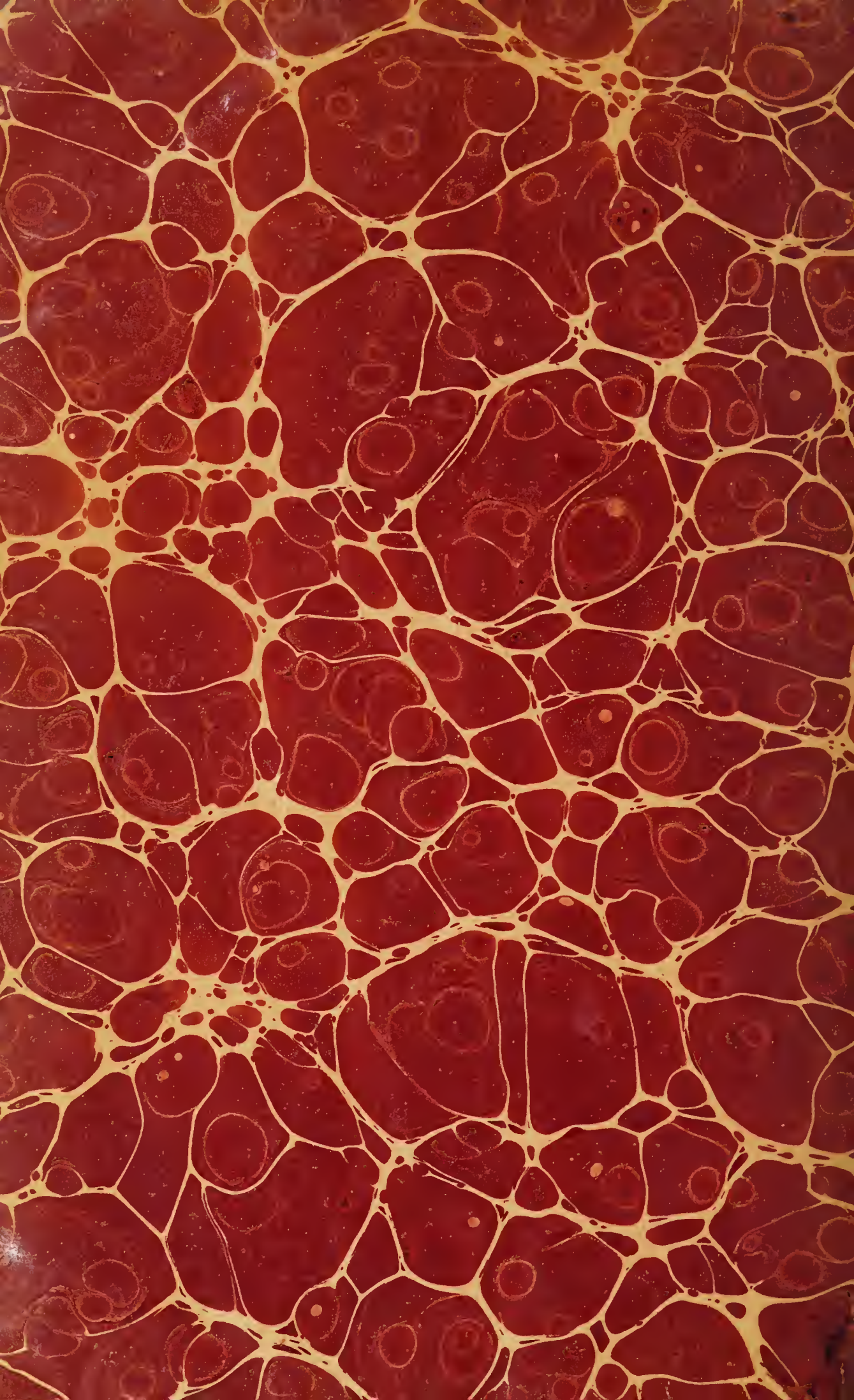
This is the usual report of inspection.

WYOMING STATION, Laramie, H. G. Knight, Director.

Alfalfa Hay for Horses. By A. D. Faville. (Bulletin 98, pp. 8.)

The results of comparative tests of alfalfa and native hay are reported.





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